

Claims

1. (Amended) An earthquake prediction method wherein:
telluric current induction field vectors and telluric currents are
estimated based on vector differences between observed magnetic field
vectors of magnetic fields that are observed within an observation area and
5 a geomagnetic vector; and
change over time of the telluric currents and a state of telluric
currents within said observation area are compared and collated with past
patterns of change over time of the telluric currents and a state of the telluric
currents to estimate a seismofocal zone, time of occurrence, and seismic
10 intensity of a seismic event.
2. (Amended) An earthquake prediction method according to
claim 1, wherein:
a magnetic field noise component at observation points is
eliminated from observed magnetic fields;
5 an amount of divergence of a direction of a magnetic fields
from a direction of true north at observation points from which said magnetic
field noise component has been eliminated is found; and
said telluric current induction field vectors are estimated based
on vector differences between observed magnetic field vectors from which
10 said magnetic field noise component has been eliminated and a
geomagnetic vector that has been corrected to true north.
3. (Amended) An earthquake prediction method according to
claim 2, wherein:

said estimated telluric current induction field vectors are plotted on a map; and

5 said telluric currents are estimated by both joining points on the map at which geomagnetic abnormalities are recognized and applying Ampere's right-handed screw rule.

4. (Amended) An earthquake prediction method according to claim 1, wherein:

said estimated telluric current induction fields are plotted on a map; and

5 an area in which said estimated telluric currents are concentrated is estimated to be a seismofocal zone.

5. (Amended) An earthquake prediction method according to claim 1, wherein:

past data of telluric current induction field intensities of said seismofocal zone that has been estimated in claim 4 are gathered and a
5 telluric current induction field intensity change pattern that indicates change over time is generated; and

this pattern is then compared and collated with past telluric current induction field intensity change patterns that have been stored to estimate said time of occurrence and seismic intensity of a seismic event.

6. (Amended) An earthquake prediction system that uses the earthquake prediction method according to claim 1; said earthquake prediction system comprising:

mobile telephones or mobile units such as vehicles or ships,
 5 each unit carrying:
 a magnetic force line sensor for supplying as output magnetic
 field data that indicate a direction and intensity of lines of magnetic force;
 a GPS position detector for receiving radio waves of a GPS
 satellite and supplying as output position data that indicate position; and
 10 a data transmitter for transmitting said data; and
 an earthquake prediction center for collecting said data of
 various points that are transmitted by said mobile units or said mobile
 telephones that travel within an observation area and then implementing
 earthquake prediction.

7. (Amended) An earthquake prediction system according to
 claim 6, said earthquake prediction center comprising:

 a data receiver for receiving data that have been transmitted
 from said mobile telephones or said mobile units by way of a communication
 5 network and antenna;
 a data storage unit for retaining and storing various data such
 as map data and data that have been received by said data receiver;
 a telluric current induction field estimation unit for estimating
 telluric current induction fields based on map data and data that have been
 10 retained and stored in said data storage unit;
 telluric current estimation unit for estimating telluric currents
 based on said telluric current induction fields that have been estimated;

a telluric current induction field intensity change pattern
generation unit for accumulating transitions over time of said telluric current
15 induction field intensities and then generating change patterns; and
an earthquake prediction unit for analyzing said telluric
currents that have been estimated and said change patterns of said telluric
current induction field intensities to estimate a seismofocal zone, seismic
intensity, and time of occurrence of a seismic event.

8. An earthquake prediction system according to claim 6, wherein,
when said mobile unit is provided with a car navigation system, position data
of said car navigation system is used instead of data from said GPS position
detector.

9. An earthquake prediction system according to claim 6,
wherein:

said magnetic force line sensor and communication equipment
are installed in preselected existing fixed structures within the observation
5 area; and

said communication equipment transmits magnetic field data
output of said magnetic force line sensor and information indicating
installation positions to said earthquake prediction center by way of an
existing communication network.

10. An earthquake prediction system according to claim 6,
wherein:

said magnetic force line sensor and GPS position detector are

incorporated in a mobile telephone or a mobile unit; and

5 said mobile telephone uses its own communication capabilities to transmit observation data to said earthquake prediction center.

11. An earthquake prediction system according to claim 9, wherein an acceleration sensor is provided, and said magnetic field data are transmitted when said acceleration sensor detects earthquake motion.

12. (Amended) An earthquake prediction system according to claim 6, wherein an acceleration sensor is provided and said magnetic field data are transmitted when said acceleration sensor detects a stationary state of at least a fixed time interval.

13. (Added) An earthquake prediction method according to claim 2, wherein:

 said magnetic field noise component is change in magnetic field that is observed at fixed time intervals at a fixed observation point; and

5 said magnetic field noise component is eliminated by analyzing characteristics of a pattern of this change and then extracting the magnetic field noise component.

14. (Added) An earthquake prediction method according to claim 2, wherein said telluric currents are estimated by means of Ampere's right-handed screw rule based on said estimated telluric current induction field vectors of a plurality of points.

15. (Added) An earthquake prediction method according to claim 14, wherein said telluric currents are estimated by means of Ampere's right-handed screw rule based on said estimated telluric current induction field vectors of a plurality of points that form a loop.